



PATENT
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Jörg BERNARD et al.

Application No.: 10/088,602

Filed: August 23, 2002

For: HARD CANDY WITH IMPROVED
STORAGE STABILITY

} Group Art Unit: 1761
} Examiner: L. WONG
} Confirmation No.: 6889

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

DECLARATION UNDER 37 C.F.R. § 1.132

1. I, Joerg Kowalczyk, am a German citizen, residing at Wormser Straße 11, 67283 Obrigheim/Pfalz, Germany.
2. I graduated in chemistry and was awarded a Ph.D. in polymer chemistry from the Technical University of Braunschweig, Germany.
3. I hold the position of Head of Product Development in the Central Research & Development Department of Südzucker Aktiengesellschaft Mannheim/Ochsenfurt of Germany. During my employment there, I have been engaged in research and development regarding the manufacture and storage of hard candies.

4. I am a co-inventor of application no. 10/088,602, and I am familiar with that application.

5. I understand the rejections made in the Office Action of February 21, 2006, in Application No. 10/088,602, and the references referred to therein.

6. The claimed Invention relates to a hard caramel with improved stability in storage and a method for producing the same.

7. I note that the Office Action of February 21, 2006, takes the position that the cited references teach the use of 1,1 GPM and sorbitol in hard caramels and that the different specific amounts employed were a matter of choice and at most mere optimization. I respectfully disagree. The Specification itself, particularly in the Examples, provides evidence that the improved stability of the hard caramels can be observed only if concentrations of 1,1-GPM and sorbitol are employed in the claimed ranges. This function was unexpected, and it has practical significance because the stability of hard caramels influences their marketability.

8. Further to my declaration of November 22,2005, filed November 28,2006, I have performed additional experiments to show that the claimed concentrations of 1,1-GPM and sorbitol result in hard caramels with improved stability in storage. The experimental data is summarized in Exhibit 2, annexed to this declaration, which contains Example D.

9. In this Example, I prepared several samples of hard caramels (samples O to V) according to Example 1 of the application under consideration. Samples P, Q, T and U (shown in bold in Exhibit 2) were prepared according to the invention. Samples O, R, S, and V were prepared as comparative examples using concentrations of 1,1-GPM or sorbitol outside the claimed ranges.

10. In the experiment performed all samples were stored under 70 % relative humidity at 30 °Celsius for 3 days. For each sample the water content before storage was measured. After 3 days the individual degrees of water uptake into the caramels were calculated based on the weight gained during storage. The results of the experiment are shown in the table and Figure 1 of Exhibit 2.

11. I note that the degree of water uptake of a hard caramel is a measure for storage stability. Due to water uptake during storage a crystalline layer builds up. The formation of crystalline layers or areas is an unwanted phenomenon impairing the quality of the product and its marketability. A hard caramel with a low water uptake resulting in only a thin crystalline layer, if any, is preferable. Such a caramel has improved storage stability over a hard caramel with a higher degree of water uptake during storage, provided that both are stored under the same conditions.

12. As shown in Exhibit 2, samples P, Q, T and U, which were prepared according to the invention, have noticeably lesser water uptake during storage than the samples prepared for the purpose of comparison have. The results show that the combination of specific concentrations of 1,1-GPM with specific concentrations of

sorbitol results in hard caramels have the unexpected advantageous property of a lesser degree of water uptake.

13. This finding was unexpected. Before I made the present invention, I would have never expected that certain concentrations of 1,1-GPM and sorbitol will have that beneficial effect to a hard caramel. As depicted in Figure 1 of Exhibit 2, the improved storage stability of a hard caramel as estimated by way of measuring its water uptake during storage, does not at all follow a mere predictable trend. This is in contrast to what the Office Action is assuming. That is, decreasing the concentration of 1,1-GPM and/or increase the concentration of sorbitol in a known hard caramel does not necessarily result in a caramel with lesser water uptake, i.e. improved storage stability.

14. Because these results were unexpected, it was not mere optimization to discover that the combination of specific concentrations of 1,1-GPM with specific concentrations of sorbitol would produce hard caramels with improved storage stability.

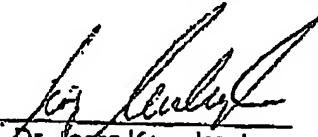
15. I further note that from the teaching of *Willibald-Etting et al.* and *Kunz et al.* a skilled person could not foresee by any means that the selections of specific concentrations of 1,1-GPM and sorbitol in a hard caramel would decrease the tendency of building crystalline layers, thus improving storage stability. The unexpected finding above would not have been obvious from the prior art.

16. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and

further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: August 10th, 2006

By:



Dr. Joerg Kowalczyk

end: Exhibit 2



SÜDZUCKER 

Exhibit 2

Example D

storage conditions: 70% rel. hum. / 30°C; storage time: 3 days

Table:

	GPM [% d.m.]	Sorbitol [% d.m.]	GPS [% d.m.]	Water content before storage [g/100g]	Water uptake [% d.m.]
Sample O	50.2	0.7	46.9	2.1	0.47
Sample P	55.5	0.7	42.1	1.9	0.36
Sample Q	59.9	0.7	38.3	2.5	0.37
Sample R	69.6	0.7	28.5	2.5	0.41
Sample S	50.0	2.0	46.6	2.5	0.53
Sample T	54.9	2.0	41.6	2.0	0.30
Sample U	59.0	2.0	37.8	2.4	0.25
Sample V	69.2	2.0	28.1	2.5	1.05

Figure 1

